

Before the Federal Communications Commission Washington, D. C. 20554.

In the matter of ET Docket No. 04-37, Notice of Proposed Rulemaking Regarding Carrier Current Systems, including Broadband Over Power Line Systems.

•In its Docket No. 04-37, the FCC has referred to the potential harmful interference with the licensed services operating in the 2 - 80 MHz radio spectrum. Allow me to quote or paraphrase some of the FCC's comments (numbers refer to the paragraph in the NPRM):

Introduction: The FCC proposes that "BPL systems and devices incorporate capabilities

to mitigate harmful interference...."

2. "...incorporate adaptive algorithms to counter the noise in the line."

5. Licenses services "must be protected from harmful interference as BPL systems operate on an unlicensed basis under Part 15...."

31. "We...believe that Access BPL systems can operate successfully under the non-interference requirements of the Part 15 rules [where] operators of Access BPL systems

will be responsible for eliminating any harmful interference that may occur," and that

"additional requirements specific to Access BPL operations will be adequate to ensure

that existing radio operations are protected against harmful interference from such

operations."

These quotations from the NPRM by the FCC are extremely important for they do two

things: First, the FCC acknowledges that BPL operations will likely cause "harmful

interference" and "noise" with the licensed services.

Second, the FCC states the necessity of protecting those licensed services from such

interference. There is a concern, however, for those of us who operate in the 2-80 MHz

spectrum, that is the use by the FCC of qualifying verbs such as "to mitigate", and "to

counter" when referring to interference. Such verbs imply flexibility as to how much

noise and interference must be eliminated. The adjective, "harmful", is open to interpretation. On the other hand, the FCC states that that the licensed services "must

be protected" [both paragraphs 5 and 31.]

It is this softness on the matter of eliminating BPL noise and protecting the licensed

services that concerns me. Were the FCC to state firmly that BPL interference will not be

tolerated, I would feel considerably more confident that the FCC intends to do the right

thing by the licensed services. Access BPL is experimental. There is much about the consequences of BPL that are yet to be discovered. For example, given the right

conditions, will the power lines act as multiple antennae sending signals in the high

frequency portion of the radio spectrum into the ether, bouncing off the ionosphere back to earth to create interference to licensed services far from the signal source? Given the right conditions, even tiny signals can be heard hundreds—even thousands—of miles away. It is not necessary that the power lines be "efficient" antennas; simply radiating rf power is sufficient. Such signals do not respect national boundaries. Should this sort of interference spill over to harm the radio services of other countries, is the FCC prepared to shut down the offending BPL system? And will the thousands of little signals become an aggregated aggravation? While there are many unknowns as to the impact it could have on the licensed services were it to be fully implemented in North America, it certainly appears from test already completed by the NTIA and the ARRL that the impact upon licensed services will be much more severe than the impact predicted by BPL's overly-optimistic proponents.

While the proponents of the BPL system—both those who hope to gain profit from it as well as those who are politically connected or hope to benefit politically—want to believe that interference either does not exist or is controllable, those who question its efficacy rely upon both their ears and upon their knowledge of radio and the propagation of rf power. There are any number of Part 15 devices that cause interference within the radio spectrum. Plasma TVs, my wife's touch-on, touch-off lamp (now safely 850 miles away), as well as my neighbor's warning light in his window that goes on when the temperature within his house goes below a certain level—all wreak complete havoc with my receiver when listening to shortwave and amateur band stations. If these devices can cause interference so strong as to block out the intended signal, it seems obvious to me that BPL noise will be hard to control. I'm satisfied that those reading these comments have listened to the noise created by BPL as demonstrated on the ARRL website. Let me suggest another more recent test done in Penn Yan, New York, on March 27, 2004. Please attend to this site: <http://vhfgroup.rochesterny.org/> See the download section for a selection of recordings done on March 27, 2004, during a worldwide radio contest. BPL signal strength in the 10 meter amateur band was recorded at S9 and the noise was covering up all but the strongest radio signals on the band. The noise continued down through much of the Citizens' Band frequencies. Other amateur bands also were affected by the piercing noise. Can such harmful noise interference be eliminated? Can the licensed services be fully protected from the racket BPL generates? Can a power company feel so secure in its ability to fully eliminate such interference as to gamble their investors' dollars on such a experimental system that has yet to prove out—and which may never prove workable?

•To quote paragraph 11 of the NPRM, "The United Power Line Council (UPLC)...submits that in areas already served by other broadband providers, BPL will increase competition, which in turn will bring better service and lower prices." Would one expect a proponent hoping to make a large monetary gain to say otherwise? But is this true? I

recently switched from TDS dial-up service to their 384 DSL service. I pay \$35.00 per month for this service. What makes anyone believe that BPL will cost less than \$35 per month? I recently saw a BPL site where the cost per month was to be \$39 following three months at \$19 per month as an introductory offer. If someone is too distant for DSL and cable is not available, one can still use a dial-up service, some of which are but \$9.95 per month. In short, the internet already is available to anyone with a phone line. Quite frankly, I believe the idea that BPL will be less expensive than existing services is a "non-starter"—unless an electric service provider is willing to subsidize BPL for its customers. That idea is a non-starter, also. DSL and cable will force the power providers to lower their prices to customers, not the other way around. Are the electric service providers and their stockholders will to gamble on a system that may never recover its start-up costs?

•III. DISCUSSION

30. It is contended that Access BPL will further homeland security by "protecting this vital element [the electric power distribution system] of the U. S. critical infrastructure." The operative word in this paragraph is "may" as in "may allow the electric utilities to improve the safety and efficiency of the electric power distribution system...." Nowhere in the NPRM is there any discussion of how this is to be realized. From the huge power disruption in the summer of 2003 and the reports of how unprotected our power system is now against determined terrorists, it is wholly undemonstrated as to how BPL could strengthen the infrastructure. If, in fact, a power system were attacked and brought down, the BPL system would come tumbling down with the rest of the system. Those relying on BPL would lose not only their power, but also their connection to the internet. Of course, BPL would be lost during any power outage regardless of the cause. Furthermore, if the harmful interference of BPL is not contained, hence damaging communications in the radio spectrum, the U. S. would be weakened—certainly not strengthened—in its defense against terrorism. Amateur radio is one of the aces in the Homeland Security deck because of the ubiquitousness of the service. Homeland Security is weakened to the extent that amateur radio, along with the other protected services such as FEMA, are interfered with by Part 15 devices. Not only should Access BPL systems be required to protect public safety communications (36), but also the amateur radio bands should be fully protected for the services radio amateurs provide during local, state and national emergencies. It only makes sense to place such clear and stringent requirements on power companies from the very beginning; they need to know the rules under which they must operate before risking their capital on such an unproven service.

Paragraph 31 states that "operators of Access BPL systems will be responsible for eliminating any harmful interference that may occur." So long as the parties interfered with (i.e. the licensed services) have the power to define the term "harmful," and so long as the FCC stands tall in the defense of the licensed services, and so long as the electric power providers or those entities which use power lines to transmit BPL do not attempt to shirk their responsibilities

in eradicating any interference to the licensed services, there may some leeway in my views of BPL. Should I feel hopeful that these conditions will be met? In paragraph 39, the FCC gives me some reason to be hopeful for paragraph 39 states that the FCC proposes requiring BPL systems to "mitigate or avoid harmful interference to radio services...." The term, "mitigate," however, is a "weasel" word, allowing a power company to weasel out of actually stopping harmful interference. Again, if the radio services are the ones to define "mitigate" and "harmful," there may be hope. Hence, I call upon the FCC to place in its rules that the radio services are the final determiners of what constitutes harmful interference. If it is left up to the power companies to define, they could well say, "This is all we're going to do to mitigate our interference to you." That would be wholly unacceptable.

- Paragraph 34 is one in which the FCC would have been better served had it used some common sense and eliminated the following sentence: "We therefore would expect that, in practice, many amateurs already orient their antennas to minimize the reception of emissions from nearby electric power lines." Such a gratuitous comment should have been selected and deleted by someone in authority. I have yet to determine in my own mind whether the person responsible for this statement had used a pen dripping with sarcasm and was being mean-spirited, or whether he or she is simply ignorant. In either case, were I his or her superior in the commission, the writer would be joining the long line of the unemployed.

I live on a lot roughly 75 x 110 feet. I have a 55 foot toweratop which is a quad beam. I use remote control to orient the antenna toward the source of the signal that I wish to intercept. Directly across the street from me are an even dozen power lines and some cable lines. My quad is roughly even in height with the power lines, some 33 yards distant. To orient my antenna to minimize the reception of emissions from these power lines, I would need never to direct the beam atnenna to the west, southwest, or northwest. In addition, I have two wire antennas, each with one end attached to trees. One is about 12 yards from the power lines; the other, about 13 yards. One can only orient ones antennas given the layout of ones yard, house, trees, or other antenna supports. It is ludicrous to suggest that I can do otherwise. Should the writer of the above sentence wish to purchase for me a ten acre property out in the country away from the power lines, I shall be most happy to follow his or her suggestion about how to "minimmize the reception of emissions from nearby electric power lines." I will accept the property with thanks. The point that many radio operators make about power companies and their power lines, is that many companies make only the most minimal effort to correct interference problems that exist now—without BPL. Some power providers have to be threatened with court to encourage them to fulfill their responsibilities. What makes one believe that power companies will be more amenable to correcting problems caused by BPL interference? Electric power is necessary for a multitude of uses. Power lines and harmful radiation emanating from the lines, however, are the interlopers in the residential community; it is not those who live there.

- Finally, I tend to take a dim view of politicians and others who jump on the bandwagon regarding the newest and latest. BPL is here because it has powerful political and financial connections, but the politicians may be quite ignorant of the concept and its unintended consequences. Experience frequently shows that the fad of today is old and decrepit by tomorrow. Today's "nirvana" can be tomorrow's hell. but to attempt to attain said nirvana, one doesn't chop down the mighty century-old white oak to nurture what might turn out to be a trash tree.

I am very uneasy about the effects of BPL. On paper, it appears to be worth consideration. The proof of the pudding, however, is in the eating. Will BPL really work as its proponents—who hope to cash in on the system—optimistically suggest? Will it work if the FCC adopts stringent rules against interference in the 2 - 80 MHz spectrum? Will the FCC insist upon the integrity of proven radio licensed services over and against those who cause harmful interference? Let us hope so.

I heard one person describe BPL as "visionary." While I believe he meant that BPL was progressive and forward-looking, he failed to understand the actual definition of "visionary." Webster's New World College Dictionary, Third Edition, 1997, does not include "progressive" or "forward-looking" in its definitions of visionary. Two of the meanings have to do with the nature of something being seen in a vision. The usual definition, however, defines "visionary" as a) "existing only in the mind; not real; imaginary." b) "not capable of being put into effect; not realistic; impractical [a visionary scheme.]" Is Access BPL visionary?

I believe the protection of existing licensed services constitutes a matter of integrity on the part of the FCC. There are those who say the FCC has compromised itself before the demands of large corporations, both broadcast and power companies; that the FCC operates out of the back pockets of these corporations; that the FCC no longer is robustly proactive in protecting those who need it most from the powerful corporations. I am not ready to concede these charges. I may be naive, but I believe that the members of the FCC realize their responsibility to insure that the licensed services are placed first over Part 15 devices and operations. The integrity of the office (and of the individuals who comprise the office) in its (and their) commitment to protect the licensed services from Part 15 interference must be paramount--and I trust that the commissioners will wholly fulfill that commitment. Hence, I recommend that the FCC establish and promulgate the most stringent controls on those electric power providers seeking to participate in this BPL experiment. Electric power providers and others need to be thoroughly cautioned that their BPL programs will be shut down if licensed services complain of interference in the latter's operations.

Sincerely,

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